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attraction to the Royal Gardens. There has just been established near what is known as the rhododendron dell in the arboretum a small bamboo garden. The species are mostly Japanese, Chinese and Himalayan and are probably the finest collection now in Great Britain. The naturalized bamboos have already created a great deal of interest, which may be followed by their more general cultivation. Two interesting official publications may also be mentioned—one in course of being issued and the other projected by the staff at Kew. The former is a complete list of the plants cultivated in the gardens, which it is hoped will fix a standard nomenclature, thus doing away with the confusion of identical plants known under two or more names. The other book will be a guide to the economic plants, and will include a summary of their qualities and uses.

THE London *Times* states that a Pasteur filter on a large scale has been exhibited by Messrs. J. Defries and Sons on their premises in Hounds-ditch. It has been constructed by them for the municipal authorities of Darjiling, with the sanction of the Indian government, and will be sent out there immediately. The filter consists of a series of iron 'cells,' or circular vessels, each of which contains 250 Pasteur porcelain tubes. These tubes resemble hollow candles and stand upright in the floor of the cell. The water filters through them from the outside to the inside under pressure or by gravity, and all impurities are arrested on the surface of the porcelain, which is formed of a special clay or mixture of clays. The filter is cleaned periodically, or as often as may be necessary, by scraping off the deposit from the surface of the tubes and by passing through them dilute hydrochloric acid, which dissolves and carries away the earthy salts deposited in the interstices of the porcelain. The principal of this filter and its successful application to domestic purposes have been well known for several years and have gradually overcome the distrust with which sanitary science is inclined to regard all filters. Its efficiency seems to be well established not only by laboratory experiments, but—far more convincingly—by the practical results in the reduction of water-borne disease obtained by its use in the French army.

The interest of the present exhibit lies in the size of the installation. It consists of 38 cells and 9,500 tubes, which will deliver 150,000 gallons per day.

As we are going to press with the present number of SCIENCE we have received provisional programs of the several sections of the approaching meeting of the American Association for the advancement of science. The number of papers entered at a date considerably in advance of the meeting is as follows: Section A. Mathematics and Astronomy, 8; Section B. Physics, 19; Section C. Chemistry, 60; Section D. Mechanical Science and Engineering, 23; Section E. Geology and Geography, 17; Section F. Zoology, 17; Section G. Botany, 35; Section I. Social and Economic Science, 9. In each of the sections other papers will doubtless be offered, which will be entered on the daily programs published during the meeting. It is a great advantage to have the programs in advance of the meeting and we regret that it is now too late to print them in full in this issue of SCIENCE. We hope to publish full reports of the sectional meetings, but no one who is able to be present at Buffalo should neglect to attend a meeting which promises to be of especial interest.

UNIVERSITY AND EDUCATIONAL NEWS.

THE HULL BIOLOGICAL LABORATORIES.

THE Chicago *University Record* gives an account of the exercises held on the occasion of the laying of the corner stone of the Hull Biological Laboratories on July 3d. The address in the convocation tent was given by Prof. G. L. Goodale, of Harvard University, who spoke on 'Some of the Relations of Natural History to Thought and Modern Life.' President Harper made a statement regarding the importance of Miss Culver's gift for the development of science, in the course of which he made the following important announcement regarding the place of investigation in the medical school: "In laying these corner stones to-day we are laying the foundations of a school of medicine, for aside from the distinct work outlined in each department there is that great and important

service to be rendered in the establishment of a school of medicine, the chief work of which shall be investigation."

The company then adjourned to the site chosen for the Laboratories, where the corner stones of the buildings were successively laid with appropriate ceremonial and addresses. Head Professor John M. Coulter gave the address at the foundation of the Botanical Laboratory; Associate Professor Jacques Loeb, at the site of the Physiological Laboratory; the address written by Head Professor Henry H. Donaldson was read by Assistant Professor E. O. Jordan at the site of the Anatomical Laboratory, and Head Professor Charles O. Whitman spoke at the Zoological foundation.

In the evening the University gave a dinner to Miss Helen Culver and the men of science present from other universities. Short speeches were made by Profs. Goodale, Barnes, Forbes, Burrill, McMurrich, MacBride and Holmes representing their respective institutions. Profs. Whitman, Loeb, Jordan and Coulter spoke in behalf of the biological faculties and Profs. Chamberlin and Judson on behalf of other departments. Finally President Harper told very simple the story of the gift, of its unexpectedness, of its coming entirely unsolicited and the manner in which it relieved the pressing wants and satisfied the most sanguine hopes of the departments concerned. At last late in the evening he announced that Miss Culver would say a few words. Then with the guests standing in their places at the tables, Miss Culver expressed very quietly her pleasure and satisfaction in being able to do what she could for the cause of higher education, and modestly claimed for herself only the credit of being an agent in carrying out what she felt would have been the desires of the man whose name the laboratories are to bear, Mr. C. J. Hull.

SCIENCE AT OXFORD.

WE called attention in a recent number of this JOURNAL to an important article in *Nature* on the position of science at Oxford. Prof. E. Ray Lankester, Linacre professor of zoology at Oxford, has addressed the following letter on the subject to *Nature*:

"Will you allow me a few lines in which to express my entire agreement with your recent article on this subject, if only to emphasize the fact that I am not the author of the article, and that the opinions there expressed are not those of an isolated individual. The reason for the comparative neglect of natural science at Oxford is that, however well-disposed some individuals may be, the college tutors and lecturers as a rule dislike it. They dislike it for two reasons: First, because it cannot be taught in the college parlors called lecture rooms; and second, because they are, as a rule, ignorant—owing to their own defective education—of the nature and scope of the immense field of study comprised under the head 'natural science.' They do not know either the enormous educational value of natural science, or its vital importance to our national life and development.

"And lastly, if they did know, there is no conceivable motive which could operate so as to induce them to sacrifice some of the rewards and educational domination, which are at present enjoyed by the long-established classical and historical studies, to newer lines of work in which the present beneficiaries and their academic offspring can have no share.

"The situation is a 'dead-lock,' and only an intelligent Parliamentary Commission (if such is possible) can put matters on to a fair and healthy basis. Probably the scandal of the present paralysis of our beloved Oxford will have to become even greater and more outrageous than it is at this moment, before the necessary remedy is applied.

"But happily the vitality of Oxford is indestructible. The misused and monopolized resources of Oxford will assuredly some day be devoted to the true purposes of a great university."

GENERAL.

THE authorities of Princeton University have issued a circular of information regarding the sesqui-centennial celebration which takes place on October 20th, 21st and 22d. The most important ceremonies will be held on October 22d, when degrees will be conferred and announcements will be made of the endowments secured. During the week preceding these exercises lectures will be given by some of the foreign

visitors. Prof. William Libbey is Secretary of the Reception Committee and should be addressed by those desiring programs or tickets.

WE learn from the *Academische Rundschau* that the total number of students matriculated in the German universities during the present summer semester is 29,864. This is 1,000 more than last summer and the largest attendance ever recorded, surpassing by about 400 the largest previous attendance which was in the summer of 1889. Berlin leads with 4,649 students, followed by Munich, Leipzig, Tübingen, Heidelberg, Erlangen and Göttingen, at each of which there were over 1,000. The students are distributed among the faculties as follows : Protestant theology, 2,959; Catholic theology, 1,502; law, 8,077; medicine, 7,931; pharmacy and dentistry, 1,415; philosophy, philology and history, 3,607; mathematics and natural science, 3,020; agriculture, 1,353. The total number of foreigners, including Austria and Switzerland, was 2,189, of whom 513 were Russians, 450 Americans, 139 English and 56 French.

THE *Botanical Gazette* states that Prof. Thos. A. Williams, professor of botany in the Agricultural College of South Dakota, has been appointed assistant in the division of agrostology of the Department of Agriculture. Mr. F. S. Earle, of the Alabama Polytechnic Institute, has been promoted to the professorship of biology made vacant by the removal of Prof. Underwood to Columbia University.

PROF. G. B. MATHEWS has resigned the chair of mathematics in University College, North Wales.

THE chair of mental philosophy and logic established sometime since in the University of Cambridge has never been filled, owing to lack of endowment. £700 annually have now been appropriated for the chair, £200 of which is due to the generosity of Prof. Sidgwick, and it is expected that a professor will soon be appointed.

SIR WALTER GILBY has founded in the University of Cambridge a lectureship on the history and economics of agriculture, having guaranteed for this purpose £25 a year for twenty-one years.

MR. S. HENBEST CAPPER, of Edinburgh, has

been appointed to the newly-founded Macdonald Chair of Agriculture in the McGill University, Montreal.

THE following appointments are announced in German universities : Dr. Kurt Rümker has been made full professor of agriculture in the University of Breslau ; Dr. Fr. W. Küster, professor of physical chemistry in the University of Göttingen, and Dr. Wilhelm Sandmeyer, professor of physiology in the University of Marburg. Dr. Max Fischer, of Halle, has been made professor in the Agricultural Institute at Leipzig. Prof. Hofmeister, of Prague, has been called to the chair of physiological chemistry in the University of Strasburg ; General M. Rijkatschef has been appointed director of the Physical Observatory in St. Petersburg, as successor to Dr. Wild. Dr. Richard Lorenz of Göttingen, has been made professor of electro-chemistry in the Polytechnic Institute in Zurich. The railway inspector, Herr Troske, has been appointed professor of engineering in the Technical High School of Hanover. Dr. Schleiermacher, of the Technical High School in Karlsruhe, has been promoted to a full professorship of electro-chemistry, and Dr. Schuberg, of the University of Heidelberg, to an assistant professorship of zoology. Dr. J. Biehringer has been appointed docent in general and technical chemistry in the Technical High School in Braunschweig, and Dr. Benecke docent in botany in the University of Strasburg.

DISCUSSION AND CORRESPONDENCE.

GIFTS TO THE LICK OBSERVATORY.

MISS CAROLINE W. BRUCE, of New York City, has given the observatory a sum of money to procure a large comet-seeker, and to provide photometers for visual use with the thirty-six-inch equatorial.

Mr. Walter W. Law, of Scarboro'-on-Hudson, has likewise made a liberal gift towards providing for the publication of the Observatory Atlas of the Moon mentioned in the *Publications*, Volume VIII., page 187. The grateful thanks of the Observatory are offered to these friends, who have made it possible to undertake new work. EDWARD S. HOLDEN.

MOUNT HAMILTON.